REMARKS

Upon entry of this Amendment, claims 1-15 are all the claims pending in the application.

Claims 12-15 have been added. Claims 1-11 presently stand rejected.

Drawings

As noted in the Amendment under 37 C.F.R. § 1.111 filed January 20, 2004, the

Examiner is respectfully requested to indicate approval of the drawings filed on October 12,

2000.

Information Disclosure Statement

As noted in the Amendment under 37 C.F.R. § 1.111 filed on January 20, 2004, the

Examiner has not initialed all of the references listed on the PTO/SB/08 filed on June 19, 2003.

Applicant notes that each of these references was cited by the Japanese Patent Office in a co-

pending Japanese application. A copy of the Japanese Office Action with an English translation

of the pertinent portions of the foreign office action was submitted with the Information

Disclosure Statement on June 19, 2003. Applicant submits that under MPEP §609(III)(A)(3), the

requirement for a concise explanation of relevance has been satisfied. The Examiner is kindly

requested to provide a copy of the PTO/SB/08 filed on June 19, 2003 indicating that all

references have been considered. For the Examiner's convenience, Applicant is enclosing

herewith a copy of the PTO/SB/08 as filed on June 19, 2003.

Claim Rejections

Claims 1, 3, 5 and 7-10 are rejected under 35 U.S.C. § 103(a) as being unpatentable over

Rainish et al. (USP 6,606,490) in view of Hideo (JP-A 10-200353) and claims 2, 4, 6 and 11 are

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rejected under 35 U.S.C. § 103(a) as being unpatentable over Rainish et al. in view of Poutanen

(USP 5,457,813). For the reasons set forth below, Applicant respectfully traverses the rejections

and requests favorable disposition of the application.

Argument

The invention disclosed and claimed in the present application relates to an AGC loop

used particularly in CDMA receivers. That is, one of the objectives sought by the present

inventors is to ensure that the power level of an IF-converted CDMA receive signal is kept

constant from slot to slot. (See, e.g., page 11, lines 4-14). Conventional methods, including

those cited by the Examiner in the latest office action, fail to adequately consider the timing of

the AGC control.

Claim 1

Claim 1, as amended, recites, *inter alia*, an AGC loop comprising

> means for determining a portion of the received signal from which the
> received power level is calculated and wherein further, *a length of the
> determined portion of the received signal is variably controlled based on
> an amount of gain required by said AGC loop*

That is, as disclosed in the specification, in order to ensure that the power level of a

subsequent slot is properly controlled to be equal to a desired value, the power level of the prior

slot is measured only at a predetermined portion, for example, from the beginning of the slot

until half-way into the slot. The location and length of the predetermined measured portion of

the prior slot are determined based on factors such as the rise time of the AGC amplifier with

respect to the gain amount needed to ensure that the power level of at the beginning of the

subsequent slot is equal to the desired value.

The grounds of rejection assert that the combination of the conventional art systems disclosed in Rainish and Hideo teach the above claimed feature of claim 1. Applicant respectfully disagrees at least because neither Rainish nor Hideo teach or otherwise suggest an AGC loop comprising a structure that determines a portion of a received signal to use for calculating a power level of the received signal and, further, determining a length of this portion based on the amount of gain required by the AGC loop to get the received signal to a desired value.

In particular, Rainish discloses a battery-powered portable radio receiver and a method for reducing the active reception time in order to increase battery life. (Col. 1, lines 6-47). Although Rainish does disclose CDMA receivers as well as a conventional AGC loop therein, Rainish does not anywhere disclose the claimed feature discussed above.

Hideo discloses a burst AGC circuit and a corresponding burst AGC control method for reducing the power consumption of a variable gain amplifier when a burst signal is not present. Hideo discloses a general AGC circuit, however, and has nothing to do with CDMA receivers. Accordingly, the AGC control circuit disclosed in Hideo does not contemplate the unique issues related to CDMA receivers, such as power control based on slots. More particularly, however, Hideo does not teach or disclose an AGC loop wherein <u>a length of a determined portion of the received signal is variably controlled based on an amount of gain required by said AGC loop</u>. The objective in Hideo is to control the AGC function such that AGC is applied only during the presence of an intermittent signal (i.e., a burst signal) and not applied during periods when the burst signal is not present. (Col. 1, par. 1).

Hideo discloses a burst presence or absence signal that is used for applying or not applying the AGC function. Further, the burst presence or absence signal is output "a little before the arrival of the next burst receiving timing". (English abstract). The disclosure in Hideo, however, is entirely irrelevant to the invention disclosed and claimed in the present application. Specifically, Hideo nowhere discloses anything remotely similar to variably controlling the length of a portion of the signal from which the AGC is calculated based on the gain required by the AGC function.

For at least the above reasons, the proposed combination of Rainish an Hideo does not teach or suggest the subject matter recited in claim 1 and claim 1 is, thus, patentable over the combination. Applicant, thus, respectfully requests withdrawal of the rejection claim 1.

Claims 3 and 5

Independent claim 3 recites, inter alia, an AGC loop that includes;

> a power level calculating unit for calculating the level of full power in the band of a channel under reception, the power level calculating unit starting the power level calculation from an instant corresponding to the forefront of a first slot and stopping the power level calculation at a predetermined instant after the forefront of the first slot, wherein the predetermined instant after the forefront of the first slot is determined based on the gain needed with respect to a desired power level of a second slot.

For similar reasons to those discussed above in regard to claim 1, the proposed combination of Rainish and Hideo fails to teach or suggest a power calculation period of a first slot, the length of which is determined based on the gain required by a second slot. Accordingly, claim 3 is patentable over the combination of references and withdrawal of the rejection of claims 3 and 5 is, thus, kindly requested.

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Claims 7 and 9

Independent claim 7 recites, *inter alia*;

> a control unit for calculating control time based on the average power
> level represented by the average power level signal and feeding out
> control data upon reaching a second instant of time after the first instant of
> time, *wherein the second instant of time is determined based on a rise
> time of the AGC amplifier*

As discussed above, the length of the period of time of the first slot during which the
average power level is calculated is determined based on the rise time of the AGC amplifier such
that the desired power lever is obtained in a second slot at precisely the time corresponding to the
beginning of the second slot. Contrary to the assertion of the Examiner, Rainish does not teach
or suggest this feature. In particular, the grounds of rejection assert that Rainish "shows an
understanding of determining the rise time of the AGC circuit specifically with respect to a
second slot wherein the AGC control of the second slot is initiated at a time prior to the
beginning of the second slot based on the rise time or beginning of the second slot." This
assertion, however, stretches the that which is actually disclosed in Rainish beyond a reasonable
interpretation. In fact, there are only two passages in Rainish relevant to the timing of the AGC,
and they are contradictory. The first passage merely discloses that "a short verification of the
AGC level" is conducted prior to the receive slot (See, e.g., FIG. 4 and attendant description at
Col. 3, lines 14-23). The second passage discloses that it is possible to perform additional AGC
operations, "like power measurements and gain settings" during the data detection time.
Accordingly, contrary to the assertions of the Examiner, Rainish does not at all disclose any
consideration of the rise time of the AGC circuit.

Hideo, similarly, does not anywhere disclose taking the rise time of the AGC into consideration when determining a length of a measured portion of the receive signal. As discussed above, Hideo does disclose applying the AGC "a little before" a burst signal, but Hideo nowhere discloses anything remotely similar to variably controlling the length of a portion of the signal from which the AGC is calculated based on the rise time required by the AGC function.

Claim 9 recites a similar limitation, i.e., "wherein the AGC control of the second slot is initiated at a time prior to a beginning of the second slot based on the rise time of the second slot."

For the reasons set forth above, Applicant submits that claims 7 and 9 are neither taught nor suggested by the proposed combination of Rainish and Hideo. Accordingly, Applicant respectfully requests withdrawal of the rejection of claims 7 and 9.

Claim 10 is patentable at least by virtue of its dependence on claim 9.

Claim 8

In regard to claim 8, Applicant submits that neither Rainish nor Hideo teach or suggest, either alone or in combination, *variably setting* the start of the AGC control. Furthermore, the proposed combination of references does teach or suggest setting the start of the AGC control *so as to obtain coincidence of the instant of reaching of a desired voltage with the forefront of the next slot*. As discussed above, Rainish merely discloses that the AGC can occur either before or during the receive signal detection time and Hideo discloses that the AGC is applied "a little

before" the receive detection time. Neither reference discloses a control timing variably set in order to ensure coincidence of the desired power level with the forefront of the next slot.

For at least the above reasons, the proposed combination of Rainish and Hideo does not teach or suggest the subject matter of claim 7 and, thus, Applicant respectfully requests that the rejection of claim 7 be withdrawn.

Claims 2 and 6

In regard to claim 2, Applicant has amended the claim to recite, "wherein the AGC loop includes a power level calculating unit operable to calculate the level of full power in the band of a channel under reception by averaging the receive power over a predetermined time period, *wherein the predetermined time period comprises a continuous portion of a particular slot of the spread spectrum signal.*"

At column 2, line 61 through column 3, line 25, Poutanen discloses an AGC algorithm wherein "if the reception is continuous, the algorithm searches from sequentially successive time slots, the maximum value for the quantity $(I2)^2+(Q2)^2$." (See also FIG. 2). Accordingly, the portion of the signal used in Poutanen is a single, i.e., maximum, point within a slot and is not a continuous portion of a particular slot, as claimed.

Accordingly, claim 2 and claim 6, which depends from claim 2 are patentably distinct from the proposed combination of Rainish and Poutanen. Withdrawal of the rejection is, thus, kindly requested.

Claims 4 and 5

As discussed above, Poutanen discloses calculating AGC based on a maximum value within a single slot, or sum of maximum values from within several "successive time slots" (Col. 2, lines 61-64 and FIG. 2). Accordingly, the proposed combination of Rainish and Poutanen does not teach or suggest the claimed power level calculating unit *wherein more than one sample within the slot is used in calculating the power level*. For at least this reason, claims 4 and 5 are patentable over the proposed combination of references.

Claim 11

Applicant submits that claim 11 is patentable at least virtue of its dependence on patentable claim 9, as discussed above.

Patentability of New Claims

For additional claim coverage merited by the scope of the invention, Applicant has added new claims 12-15. Applicant submits that the prior art does not disclose, teach, or otherwise suggest the combination of features contained therein.

Conclusion

In view of the foregoing remarks, the application is believed to be in form for immediate allowance with claims 1-15, and such action is hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, he is kindly requested to **contact the undersigned** at the telephone number listed below.

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Appln. No. 09/686,090

The USPTO is directed and authorized to charge all required fees, except for the Issue

Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any

overpayments to said Deposit Account.

Respectfully submitted,

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